US Postal Service Alternative Vehicle Programs

Energy 2004
Rochester, N.Y.

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The Postal Fleet

Number of Vehicles: 208,000

•Class 8 tractors	2,200
•Spotter Tractors	400
•Class 7 Cargo van	2,500
•Class 3/4 (step van)	10,000
•Local Mail Delivery Vehicles	
–Long Life Vehicles (LLVs)	142,000
–Flexible Fuel Vehicles (FFVs)	21,000
•Mini Vans and Admin Vehicles	22,000

- Postal Service has advanced many forms of transportation, railroads and air travel.
- Postal Service history with AFV goes back to 1899 with the first electric delivery vehicle.

AFV Background

- Significant implementation began in early 1990s - 7,500 vehicle conversions to bi-fuel CNG.
- Today the Postal Service operates the Largest AFV fleet in the world.
- Diverse technologies -- CNG, Ethanol, Biodiesel, Electric and Propane.

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The Postal Fleet

Annual Fuel Consumption

- **Gasoline** — **93,625,449 gallons**
- **Diesel** — **3,434,4360**

Alternative Fuels

- **Biodiesel (B20)** — **671,305**
- **CNG** — **474,245**
- **E-85 Ethanol Flex-fuel** — **395,997**
- **Electric** — **572 (gallons equiv.)**

Annual Fuel Cost

$175 Million Annual Fuel Cost

5% improvement = $8,775,000 savings

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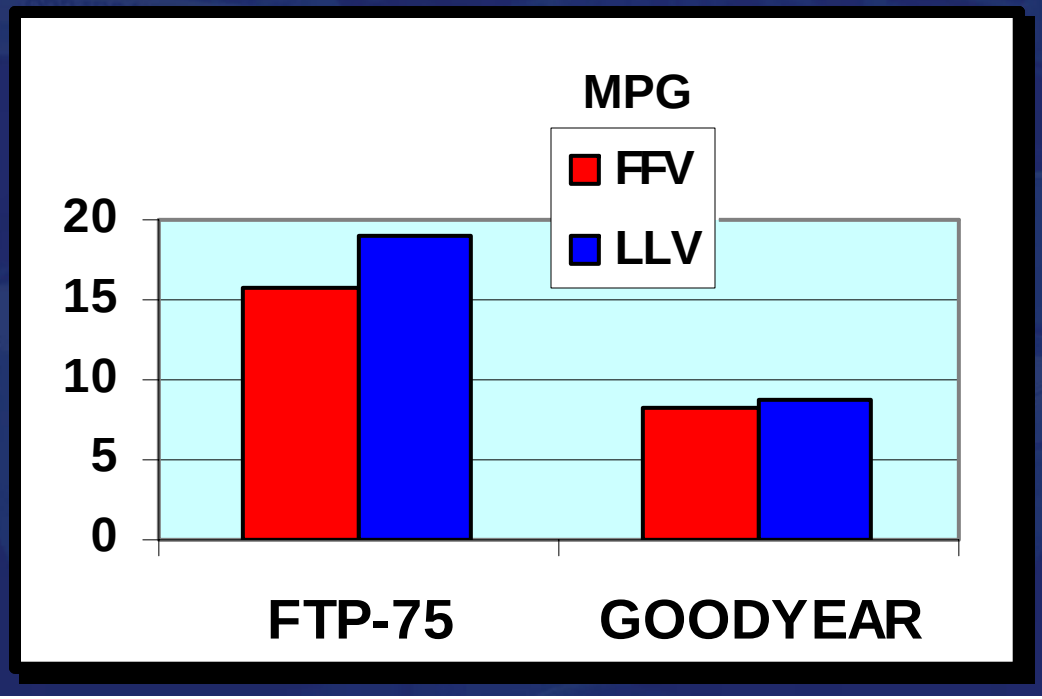
Carrier Route Vehicle Drive Cycle

- Comparison of FTP-75 to Goodyear Postal route data shows a significant reduction in MPG for both the LLV & FFV.

MPG	FTP-75	GOODYEAR
FFV	15.71	8.14
LLV	18.91	8.78



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U.S. Postal Service's Compliance with EPAct

- The Energy Policy Act of 1992 (EPAct) requires that 75% of all light-duty vehicle acquisitions (leases or purchases) be alternative fuel vehicles (AFVs). Initially, the requirement was set at 25% for fiscal year (FY) 1996, 33% in FY 1997, 50% in FY 1998, and then 75% for all subsequent years.
- Postal Service has met or exceeded the EPACT requirement in 7 out of the last 8 years. Most notably, the Postal Service exceeded (by almost 9,000) the requirement for AFV acquisitions over the past eight years.
- The Postal AFV Fleet: Currently 30,000 AFVs, 15 percent of postal fleet.

Fiscal Year	USPS Actual EPAct %	Required EPAct %	USPS excess AFV credits	Cumulative excess AFV credits	Total inventory of light-duty AFVs
FY1996	**26%**	25%	138	**138**	6,748
FY1997	**28%**	33%	-137	**1**	7,653
FY1998	**88%**	50%	4,656	**4,657**	18,397
FY1999	**96%**	75%	2,868	**7,525**	31,560
FY2000	**86%**	75%	324	**7,849**	33,554
FY2001	**85%**	75%	135	**7,984**	31,110
FY2002	**75%**	75%	0	**7,984**	32,001
FY2003	**85%**	75%	963	**8,947**	37,573

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Zero-emission electric trucks making rounds in New York

- Eight new zero-emission electric delivery trucks have joined the USPS fleet in the New York Metro Area.
- The trucks are funded by the New York Power Authority
- Solectria CitiVans are two-ton delivery trucks that will replace diesel-powered trucks used to transport mail and bulk packages between central distribution facilities and neighborhood post offices.
- The trucks can travel 40 miles on a complete charge, with a top speed of 60 mph.
- Over the course of a year, the eight trucks will eliminate about 39,000 pounds of greenhouse gases.

With Azure Dynamics

- Conversion to hybrid electric:
  - One FFV
  - One 2-ton Vehicle
- Completion Date: Feb 05
- Evaluation: Before and After Conversion for fuel economy and emission
- Testing Duration: 1 year
- Test Location: Atlanta, GA & Sarasota, FL

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CNG Vehicles

- 54 class 3/4 CNG step vans have been in operation since 1993.
- 7,500 CNG LLVs have been in operation since 1992
- Infrastructure, vehicle spare parts and limited range issues

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Green Diesel Vehicle Project

- Five International Cargo Vans will be converted
- Test Location: South Coast Area, CA
- Superior emission, better than CNG vehicles
- Meets 2007 EPA emission stds.
- Conversion Date: Summer 2004

Bio-diesel Vehicle Project

- USPS consumed 670,000 gallons of bio-diesel in 2002.
- Several hundred vehicles have been in operation for several years.
- Will conduct engine teardown analysis to compare with regular diesel vehicles.
- Solicitations for engine teardown have been sent to potential test suppliers.
- Begin test of bio-diesel in some new International cargo vans.

Fuel-Cell Delivery Vehicle

- Joint agreement between USPS & GM to lease fuel cell vehicle for two years.
- First commercial application of GM fuel-cell vehicle in the United States.
- U.S. Postal Service will begin using the fuel cell vehicle in September, which will coincide with the opening of the nation's first hydrogen pump at a retail gas station.
- Vehicle will be used to deliver mail around the Washington DC area.

G3 Next Generation Carrier Route Vehicle

- 180,000 vehicles purchased over 12 years starting in 2006.
- Exploring Alternative fuel options including hybrid, FFV (E85) and CNG.

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Challenges

- High Cost of compliance.
- Limited infrastructure--low fuel usage.
- Unaccounted costs, e.g., training, facility upgrades.
- AFVs often are not readily available that meet unique USPS requirements.
- AFV Fleet is aging, starting to turnover.

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Lessons Learned

- AFV fleet acquisitions require ‘system’ thinking--not just vehicle purchase.
- Importance of concentrating AFV deployments to attract infrastructure.
- Partnering with government agencies, other organizations, as well as vehicle and fuel industries can be key to success.
- Purchase from manufacturers that will reliably provide parts for the life of the vehicle.
- Success will be limited until costs and negative impacts to operations are overcome.

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2004 Energy

Questions and Answers